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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,447	05/08/2006	Henning Braess	PHOE030380US	6977

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
595 MINER ROAD  
CLEVELAND, OH 44143

EXAMINER
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BITAR, NANCY

ART UNIT	PAPER NUMBER
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2624

MAIL DATE	DELIVERY MODE
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03/27/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,447	<b>Applicant(s)</b> BRAESS, HENNING	
	<b>Examiner</b> NANCY BITAR	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/26/2007</u> .   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION****Examiner Notes**

1. Examiner cites particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 1, the phrase "in such a way" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino et al ( US 6,985,613) in view of Salem et al ( X-ray computed tomography methods for in vivo evaluation of local drugs release systems, IEEE 2002) and further in view of Petrillo et al ( US 6,327,546)

Ogino et al teaches the device for the in vivo determination of the concentration of a PET tracer in blood, including: an image-producing device for the locally resolved depiction of a region of the body (100, figure 1) and a data processing unit ( data collection section, 150, figure 1) which is coupled to the image-producing device and the TOF-PET unit and is arranged to set the TOF-PET unit in such a way that the volume element that is recorded with this lies in a body volume that is filled with blood, wherein the spatial position of the body volume is determined with the aid of the image-producing device (blood flow imaging, a time-of-flight (TOF) technique, phase contrast (PC) technique or the like is employed, column 11, lines 50-63, note that Thus, multi-slice blood flow tomographic images S1, S2, S3, . . . , Sm are captured with respect to a three-dimensional region of the object 300, as conceptually shown in FIG. 4).

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While Ogino meets a number of the limitations of the claimed invention, as pointed out more fully above, Ogino fails to specifically teach the in vivo determination of the concentration of a PET tracer. Specifically, Salem et al. teaches the use of X-ray Ct imaging is a useful technique for the in vivo evaluation of the pharmacokinetics of platinated agents (page 1310, paragraph 1). Moreover, Salem et al teaches We utilized a 3-D registration method to spatially align the sequence of temporal CT volumes in order to spatially examine drug distributions at different times in order to permit the determination of optimal carboplatin concentration-time relationship. it would have been obvious to one of ordinary skill in the art to use ton the in vivo determination of the concentration in Ogino imaging system in order (to permit rational design of drug delivery systems with optimal drug dosage ,release rate, and duration to provide a safe and effective localized drug therapy (page 1316, paragraph 2). Petrillo teaches the PET nuclear imaging device (see coll, lines 20-34 which include radiation detectors (see fig 3, 5), electronic unit (see fig 6) for recording the time of flight of annihilation quanta (see figure 2). It would have been to one of the ordinary skill in the art to use the combination of an image producing device of Ogino with a time of flight PET in order to reduce the time of the calibration and enables simple, possibly also dynamic or subsequent fixing of the volume element under examination thus the concentration of the tracer in the blood is measured precisely .Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claim 2, Petrillo et al. teaches the device as claimed in claim 1, wherein the TOF-PET unit comprises two .gamma. detector elements that lie opposite one another

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and the corresponding evaluation electronics unit for recording the times of flight of annihilation quanta (see figure 3, 5).

As to claim 3, Petrillo et al. teaches the device as claimed in claim 2, wherein the effective area of each detector element is approximately 10 mm.<sup>2</sup> to approximately 400 mm.<sup>2</sup> (The superior resolution of these techniques ( 10–50 mm for micro-CT and 1 mm for micro-PET, page 1315, column 2, paragraph 2))

As to claim 4, Ogino teaches the device as claimed in claim 1, wherein the image-produce and x-raying device includes an MRI device and/or an X-ray projection device, in particular an X-ray computer tomography device ( x-ray CT (computed tomography) apparatus, an X-ray imaging apparatus, PET(positron emission tomography) or a .gamma.-camera, column 17, lines 4-9).

As to claim 5, Ogino teaches the device as claimed in claim 1, wherein it includes a PET device for preferably three-dimensional recording of the distribution of the PET tracer in a body region (A blood flow projection image in a three-dimensional region is obtained by using one of these techniques to capture multi-slice blood flow tomographic images with respect to the three-dimensional region, and performing maximum intensity projection (MIP) on the multi-slice blood flow topographic images in the slice thickness direction( column 1, lines 32-38, see also Salem et al, page 1312, column 2, paragraph B).

As to claim 6, Ogino teaches the device as claimed in claim 1, wherein the data processing unit segments a body volume that is filled with blood into images produced by the image-producing device ( see figure 16) .

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As to claim 7, Ogino teaches the device as claimed in claim 1, wherein it includes a display device for depicting illustrations that have been produced with the image-producing device, as well as input means for interactive selection of a body volume in these images (The data processing section 170 is connected with a display section 180 and an operating section 190. The display section 180 comprises a graphic display, etc. The operating section 190 comprises a keyboard, etc., provided with a pointing device, Column 10, lines 56-67)

As to claim 8, Ogino teaches the device as claimed in claim 1, wherein the body volume filled with blood lies in the aorta or in the left ventricle of the heart (the blood flow images b1' and b2', figure 15).

The limitation of claims 9-10 has been addressed above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY BITAR whose telephone number is (571)270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew W. Johns/  
Primary Examiner, Art Unit 2624

Nancy Bitar

3/17/2008